@AIR TOXICS LTD.

AN ENVIRONMENTAL ANALYTICAL LABORATORY

COMPREHENSIVE VALIDATION PACKAGE

ATL Applications

INVENTORY SHEET

WORK ORDER # 1010269C

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Completed by:

Kara McKiernan	Kara McKiernan/ Document Control	10/28/10
(Signature)	(Print Name & Title)	(Date)

Air Toxics LTD.
Laboratory Services Since 1989

WORK ORDER #: 1010269C

Work Order Summary

CLIENT:	Mr. Brian Baker Environmental Health & Engineering, Inc. 117 Fourth Avenue Needham, MA 02494	**BILL TO:**	Accounts Payable Environmental Health & Engineering, Inc. 117 Fourth Avenue Needham, MA 02494
PHONE:	800-825-5343	**P.O. #**	17314
FAX:	781-247-4305	**PROJECT #**	17314
DATE RECEIVED:	10/13/2010	**CONTACT:**	Ausha Scott
DATE COMPLETED:	10/26/2010		

FRACTION #	NAME	TEST
33A	115487	ATL Applications
34A	115488	ATL Applications
35A	115489	ATL Applications
36A	115490	ATL Applications
37A	115579	ATL Applications
38A	115580	ATL Applications
39A	115581	ATL Applications
40A	115582	ATL Applications
41A	115583	ATL Applications
42A	115584	ATL Applications
43A	115696	ATL Applications
44A	115697	ATL Applications
45A	115698	ATL Applications
46A	115699	ATL Applications
47A	115700	ATL Applications
48A	115701	ATL Applications
48AA	115701 Lab Duplicate	ATL Applications
49A	Lab Blank	ATL Applications

Continued on next page

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DATE COMPLETED:	10/26/2010		

FRACTION #	NAME	TEST
49B	Lab Blank	ATL Applications
50A	LCS	ATL Applications

CERTIFIED BY: Linda S. Frumarx DATE: 10/26/10

Laboratory Director

180 BLUE RAVINE ROAD, SUITE B FOLSOM, CA - 95630
(916) 985-1000 . (800) 985-5955 . FAX (916) 985-1020

LABORATORY NARRATIVE
Hydrogen Sulfide by Radiello 170
Environmental Health & Engineering, Inc.
Workorder# 1010269C

Sixteen Radiello 170 (H2S) samples were received on October 13, 2010. The procedure involves adsorption of H2S by zinc acetate to form zinc sulfide. The sulfide is then recovered by extraction with water and addition of ferric chloride in a strongly acidic solution to produce methylene blue. Methylene blue absorbance is then measured at 665 nm using a spectrophotometer. Results are reported in uG and uG/m3.

Sampling rate of 69 mL/min for H2S was provided by the manufacturer.

Receiving Notes

Sample collection date was not provided on the Chain of Custody for any sample. The client was contacted and the dates were provided.

Analytical Notes

Results were calculated based on 25 deg C without temperature correction. The actual exposure time was used to calculate sample concentrations and reporting limits.

An exposure time of 21270 minutes was used for the QC samples and trip blanks.

Definition of Data Qualifying Flags

Eight qualifiers may have been used on the data analysis sheets and indicate as follows:
B - Compound present in laboratory blank greater than reporting limit.
J - Estimated value.
E - Exceeds instrument calibration range.
S - Saturated peak.
Q - Exceeds quality control limits.
U - Compound analyzed for but not detected above the detection limit.
M - Reported value may be biased due to apparent matrix interferences.
N - The identification is based on presumptive evidence.

File extensions may have been used on the data analysis sheets and indicates as follows:
a-File was requantified
b-File was quantified by a second column and detector
r1-File was requantified for the purpose of reissue

Sample Results and Raw Data

AIR TOXICS LTD.

ATL Application # 59 for RAD 170 (Hydrogen Sulfide)

Spectrophotometer

Field Sample I.D.	Lab Sample I.D.	Collection Date	Analysis Date	Dilution Factor	Reporting Limit (ug)	Reporting Limit (ug/m3)	Amount (ug)	Amount (ug/m3)
115487	1010269C-33A	NA	10/18/2010	1.00	0.80	0.51	ND	ND
115488	1010269C-34A	NA	10/18/2010	1.00	0.80	0.51	2.3	1.5
115489	1010269C-35A	NA	10/18/2010	1.00	0.80	0.51	ND	ND
115490	1010269C-36A	NA	10/18/2010	1.00	0.80	0.51	ND	ND
115579	1010269C-37A	NA	10/18/2010	1.00	0.80	0.55	1.3	0.89
115580	1010269C-38A	NA	10/18/2010	1.00	0.80	0.55	1.4	1.0
115581	1010269C-39A	NA	10/18/2010	1.00	0.80	0.55	1.5	1.0
115582	1010269C-40A	NA	10/18/2010	1.00	0.80	0.55	1.6	1.1
115583	1010269C-41A	NA	10/18/2010	1.00	0.80	0.51	ND	ND
115584	1010269C-42A	NA	10/18/2010	1.00	0.80	0.51	ND	ND
115696	1010269C-43A	NA	10/18/2010	1.00	0.80	0.55	1.6	1.1
115697	1010269C-44A	NA	10/18/2010	1.00	0.80	0.55	1.5	1.0
115698	1010269C-45A	NA	10/18/2010	1.00	0.80	0.55	1.1	0.75
115699	1010269C-46A	NA	10/18/2010	1.00	0.80	0.55	3.1	2.2
115700	1010269C-47A	NA	10/18/2010	1.00	0.80	0.51	ND	ND
115701	1010269C-48A	NA	10/18/2010	1.00	0.80	0.51	ND	ND
115701 Lab Duplicate	1010269C-48AA	NA	10/18/2010	1.00	0.80	0.51	ND	ND
Method Blank	1010269C-49A	NA	10/18/2010	1.00	0.80	0.51	ND	ND
Method Blank	1010269C-49B	NA	10/18/2010	1.00	0.80	0.51	ND	ND
							%Rec	
LCS	1010269C-50A	NA	10/18/2010	1.00	0.80	0.51	131	

COMMENTS: 1. NA=Not Applicable
2. ND=Not Detected
3. Exposure time of 1 minutes was assumed for the QC samples.
4. Background subtraction not performed.

Hydrogen Sulfide Radiello Calculation Worksheet

Workorder #:	1010269C	
Sampling Rate (ng/ppb.min)	0.096	Typically0.096 for H2S
Sampling T (deg C)	25	Typically 25
Volume (mL)	10.5	Typically 10.5 for H2S
Date of Analysis:	10/18/2010	
Corrected Q	0.096	Takes into account temp

Q includes conversion from Sulfide to H2S

(Abs-Y-int)xDF / Slope

Conc(ug/mL)xVol (mL)

conc (ug sulfide) *MW H2S / MW Sulfide

Conc (ug) x 1000 / Q x Duration

ppbx mw / 24.45

LabSampleID	Client	Date of Collection	Abs	Duration (min)	DF	Conc (ug/mL) of sulfide	Conc (ug) of sulfide	Conc (ug) of H2S	T Corrected, no Blank correction: Conc (ppb) of H2S	T Corrected, no Blank correction: Conc (ug/m3) of H2S
33A	115487	NA	0.090	21270	1.00	0.047454802	0.498275424	0.529536109	0.244	0.340
34A	115488	NA	0.263	21270	1.00	0.210363217	2.208813778	2.347389809	1.082	1.508
35A	115489	NA	0.021	21270	1.00	-0.01752023	-0.183962416	-0.195503806	-0.090	-0.126
36A	115490	NA	0.022	21270	1.00	-0.016578563	-0.174074911	-0.184995981	-0.085	-0.119
37A	115579	NA	0.163	19800	1.00	0.116196503	1.220063285	1.296607324	0.642	0.895
38A	115580	NA	0.173	19800	1.00	0.125613175	1.318938334	1.401685572	0.694	0.967
39A	115581	NA	0.179	19800	1.00	0.131263177	1.378263364	1.464732521	0.725	1.011
40A	115582	NA	0.188	19800	1.00	0.139738182	1.467250908	1.559302945	0.772	1.076
41A	115583	NA	0.02	21270	1.00	-0.018461897	-0.193849921	-0.206011631	-0.095	-0.132
42A	115584	NA	0.021	21270	1.00	-0.01752023	-0.183962416	-0.195503806	-0.090	-0.126
43A	115696	NA	0.195	19710	1.00	0.146329852	1.536463443	1.632857719	0.812	1.132
44A	115697	NA	0.178	19710	1.00	0.13032151	1.368375859	1.454224696	0.723	1.008
45A	115698	NA	0.142	19710	1.00	0.096421493	1.012425681	1.075943002	0.535	0.746
46A	115699	NA	0.335	19710	1.00	0.278163251	2.920714133	3.103953199	1.544	2.152
47A	115700	NA	0.024	21270	1.00	-0.014695229	-0.154299901	-0.163980332	-0.076	-0.105
48A	115701	NA	0.021	21270	1.00	-0.01752023	-0.183962416	-0.195503806	-0.090	-0.126
48AA	115701 Lab Duplicate	NA	0.026	21270	1.00	-0.012811894	-0.134524891	-0.142964682	-0.066	-0.092
					1.00	-0.03729524	-0.39160002	-0.416168128	#DIV/0!	#DIV/0!
					1.00	-0.03729524	-0.39160002	-0.416168128	#DIV/0!	#DIV/0!
					1.00	-0.03729524	-0.39160002	-0.416168128	#DIV/0!	#DIV/0!
					1.00	-0.03729524	-0.39160002	-0.416168128	#DIV/0!	#DIV/0!
					1.00	-0.03729524	-0.39160002	-0.416168128	#DIV/0!	#DIV/0!
49A	Method Blank	NA	0.02	21270	1.00	-0.018461897	-0.193849921	-0.206011631	-0.095	-0.132
49B	Method Blank	NA	0.018	21270	1.00	-0.020345232	-0.213624931	-0.227027281	-0.105	-0.146
50A	LCS	NA	0.224	21270	1.00	0.173638199	1.823201086	1.93758464	0.893	1.245

QC Duration	CCV Spike Amt
1	0.133

Verified: HH and AW on 9/4/09

Q includes conversion from Sulfide to H2S

Low PointxDF	RL(ug/mL)xVol (mL)	RL (ug sulfide) *MW H2S / MW Sulfide	RL (ug) x 1000 / Q x Duration	ppbx mw / 24.45

T Corrected, no Blank correction

RL(ug/ml) of sulfide	RL (ug) of sulfide	RL (ug) of H2S	RL (ppb) of H2S	RL (ug/m3)	Result (ug) H2S	Result (ug/m3) H2S	Result (ppb) H2S	%Rec
0.072	0.752	0.798966249	0.37	0.513	ND	ND	ND	
0.072	0.752	0.798966249	0.37	0.513	2.347389809	1.507879332	1.08173375	
0.072	0.752	0.798966249	0.37	0.513	ND	ND	ND	
0.072	0.752	0.798966249	0.37	0.513	ND	ND	ND	
0.072	0.752	0.798966249	0.40	0.551	1.296607324	0.894730297	0.641868311	
0.072	0.752	0.798966249	0.40	0.551	1.401685572	0.967240062	0.693885908	
0.072	0.752	0.798966249	0.40	0.551	1.464732521	1.010745921	0.725096467	
0.072	0.752	0.798966249	0.40	0.551	1.559302945	1.07600471	0.771912304	
0.072	0.752	0.798966249	0.37	0.513	ND	ND	ND	
0.072	0.752	0.798966249	0.37	0.513	ND	ND	ND	
0.072	0.752	0.798966249	0.40	0.554	1.632857719	1.131906575	0.812015603	
0.072	0.752	0.798966249	0.40	0.554	1.454224696	1.008077113	0.723181897	
0.072	0.752	0.798966249	0.40	0.554	1.075943002	0.745850017	0.535063462	
0.072	0.752	0.798966249	0.40	0.554	3.103953199	2.151678615	1.543587294	
0.072	0.752	0.798966249	0.37	0.513	ND	ND	ND	
0.072	0.752	0.798966249	0.37	0.513	ND	ND	ND	
0.072	0.752	0.798966249	0.37	0.513	ND	ND	ND	
0.072	0.752	0.798966249	#DIV/0!	#DIV/0!	ND	#DIV/0!	#DIV/0!	
0.072	0.752	0.798966249	#DIV/0!	#DIV/0!	ND	#DIV/0!	#DIV/0!	
0.072	0.752	0.798966249	#DIV/0!	#DIV/0!	ND	#DIV/0!	#DIV/0!	
0.072	0.752	0.798966249	#DIV/0!	#DIV/0!	ND	#DIV/0!	#DIV/0!	
0.072	0.752	0.798966249	#DIV/0!	#DIV/0!	ND	#DIV/0!	#DIV/0!	
0.072	0.752	0.798966249	0.37	0.513	ND	ND	ND	
0.072	0.752	0.798966249	0.37	0.513	ND	ND	ND	%Rec
0.072	0.752	0.798966249	0.37	0.513	1.93758464	1.244635135	0.892885659	131

Calibration Data

ug/ml of sulfide	absorbance
0	0
0.0716	0.097
0.143	0.18
0.286	0.356
0.572	0.683
1.145	1.237

Calibration Date 10/18/2010 Linear Regression

Slope	1.061946373
Y-int	0.039605545
R2	0.997358126

QC Results and Raw Data

Spectrophotometer Logbook **@Air Toxics Ltd.** **Logbook#: 1927**

Work Order: 1010269C **Date:** 10/18/10 **Method:** Rad 170

Analyst: MS/Kidmore **Wavelength:** 665nm

Standard ID	Concentration	ABS
	Sulfide (µg/mL)	
Level 1 1993-80 -E	0.0716	0.097
Level 2 -D	0.143	0.180
Level 3 -C	0.286	0.356
Level 4 -B	0.572	0.683
Level 5 -A	1.145	1.237
ICV 1993-81	0.286	0.345

r = 0.9974
m = 1.062
b = 0.0596

ICV % Recovery = 101

Fraction	Dilution	ABS	Sample ID	Sample Volume	Comments
33A	1.00	0.090	115487	10.5 mL	
34A		0.263	115488		
35A		0.021	115489		
36A		0.022	115490		
37A		0.163	115579		
38A		0.173	115580		
39A		0.179	115581		
40A		0.188	115582		
41A		0.020	115583		
42A		0.021	115584		
43A		0.195	115696		
44A		0.178	115697		
45A		0.142	115698		
46A		0.335	115699		
47A		0.024	115700		
48A		0.021	115701		
48AA		0.026	↓		
Blk1		0.020	N/A		Lot# 10101
Blk2		0.018			↓ 0.133 µg/mL
LCS		0.224			0.286 µg/mL
CCV	↓	0.353	↓	MJS 10/19/10	

Procedure:

1.) Add 10 mL of H_20 to sample tube, cap and vortex for 1 minute.
2.) Add 0.5 mL of Ferric Chloride-Amine solution and cap immediately.
3.) Allow color to develop for 30 minutes.
4.) Measure absorbance at 665nm.

MJS 10/19/10

Signed

10/19/10
Date

Spectrophotometer Standard Preparation Log

@Air Toxics Ltd. Log Book #: 1993

Standard ID: 1993-76
Project: Rad 170 Amine Solution
Analyst: M. Skidmore
Preparation Date: 10/18/10
Expiration Date: 11/18/10

Solvent: HPLC H2O
Solvent Lot #: DB 270

Procedure/Comments:

Sulfuric Acid Solution:

Slowly add 6.25 mL of concentrated sulfuric acid to 2.5 mL of D.I. H_2O, and let the solution cool. (sulfuric acid lot: 014281S).

Amine Solution:

Dissolve 1.6875g of N,N-dimethyl-p-phenylendiammonium oxalate (located in ER1A; Lot: 63797PJ) in the above mentioned sulfuric acid solution. Dilute this solution to 250 mL with sulfuric acid-water 1:1 v/v. (This is roughly 120 mL H_2O + 120 mL sulfuric acid).

MJS 10/18/10

MJS 10/18/10

Signed 10/18/10 Date

Reviewed 10/22/10 Date

Spectrophotometer Standard Preparation Log

@Air Toxics Ltd. Log Book #: 1993

Standard ID: 1993-77
Project: Ferric Chloride Solution Rad 170
Analyst: M. Skidmore
Preparation Date: 10/18/10
Expiration Date: 10/18/11

Solvent: HPLC H_2O
Solvent Lot #: OB270

Procedure/Comments: Dissolve 125 g of ferric chloride hexahydrate (located in ERAC, lot: 73297) in 50 mL of H_2O,

MJS 10/18/10

Signed 10/18/10 Date

Reviewed 10/22/10 Date

Spectrophotometer Standard Preparation Log

@Air Toxics Ltd. Log Book #: 1993

Standard ID: 1993-78
Project: Ferric Chloride-Amine Solution Rad170
Analyst: M. Skidmore
Preparation Date: 10/18/10
Expiration Date: 10/18/10

Solvent: HPLC H_2O
Solvent Lot #: DB270

Procedure/Comments: Add 12.5 mL of ferric chloride solution (1993-77, exp 10/18/11) with 62.5 mL of amine solution (1993-76, exp 11/18/10).

MJS
10/18/10

Mike Skidmore 10/18/10
Signed Date

Fauzia 10/22/10
Reviewed Date

Spectrophotometer Standard Preparation Log

@Air Toxics Ltd. Log Book #: 1993

Standard ID: 1993-79
Project: Rad 170 H_2S LCS
Analyst: M. Skidmore
Preparation Date: 10/18/10
Expiration Date: 10/18/10

Solvent: HPLC H_2O
Solvent Lot #: DB270

Procedure/Comments:

A Rad 170 cartridge (lot: 10101) was placed in a 40 mL VOA vial. 10.0 mL of D.I. H_2O was aliquoted into the vial. 1.0 mL of H_2S gas (1476-1497; 1000ppm) was injected into the vial, into the H_2O. The solution was allowed to gently shake for 2 hours. Then 0.5 of the ferric-chloride-amine (1993-78) was added to the vial and capped immediately. The solution was allowed to sit for 30 minutes and the absorbance was measured at 665 nm.

MJS 10/18/10

MJS 10/18/10

Signed 10/18/10 Reviewed 10/27/10

Spectrophotometer Standard Preparation Log

@Air Toxics Ltd. Log Book #: 1993

Standard ID: 1993-80
Project: Rad 170 calibration Curve
Analyst: M. Skidmore
Preparation Date: 10/18/10
Expiration Date: 10/18/10

Solvent: HPLC H_2O
Solvent Lot #: DB 270

Procedure/Comments:

Solution A: 2 mL of Code Rad 171 (1476-1736, exp 2/3/11) (located in ER1B) with 98 mL of D.I. H_2O = 1.145 µg/mL

Solution B: 2.5 mL of Solution A with 2.5 mL of D.I. H_2O = 0.572 µg/mL

Solution C: 1.25 mL of Solution A with 3.75 mL of D.I. H_2O = 0.286 µg/mL

Solution D: 0.625 mL of Solution A with 4.375 mL of D.I. H_2O = 0.143 µg/mL

Solution E: 0.375 mL of Solution A with 5.625 mL of D.I. H_2O = 0.0716 µg/mL

Note: Each solution was measured immediately after it was prepared. Solution A is only stable in the flask it was prepared in.

MJS 10/18/10

MJS 10/18/10

Signed 10/22/10 Reviewed 10/22/10

Spectrophotometer Standard Preparation Log

@Air Toxics Ltd. Log Book #: 1993

Standard ID: 1993-81 MTS 10/18/10
Project: Rad 170 & ICV
Analyst: FM
Preparation Date: 10/18/10
Expiration Date: 10/18/10

Solvent: HPLC water
Solvent Lot #: DB270

Procedure/Comments:

Solution A: 2 mL of Code Rad 171 (1476-1736, exp 2/3/11) (located in ER1B) with 98 mL of D.I. H_2O = 1.145 µg/mL

Solution C: 1.25 mL of Solution A with 3.75 mL of D.I. H_2O = 0.286 µg/mL

Note: Each solution was measured immediately after it was prepared. Solution A is only stable in the flask it was prepared in.

MTS 10/18/10

MTS 10/18/10

FM 10/18/10 Signed Date

Reviewed 10/18/10 Date

Shipping/ Receiving Documents

Air Toxics LTD.
Laboratory Services Since 1989

180 Blue Ravine Road, Suite B
Folsom, CA 95630

Phone (916) 985-1000 FAX (916) 985-1020
Hours 8:00 A.M. to 6:00 P.M. Pacific

COMPANY:	Environmental Health & Engineering, Inc.
ATTENTION:	Mr. Brian Baker
FAX #:	781-247-4305
FROM:	Sample Receiving
Workorder #:	1010269C
# of pages (Including Cover):	4

10/28/2010

Thank you for selecting Air Toxics Ltd. We have received your samples and have found no discrepancies. In order to expedite analysis and reporting, please review the attached information for accuracy. Corrections can be faxed to **Ausha Scott at 916-985-1020.**
ATL will proceed with the analysis as specified on the Chain of Custody and Sample Login page.

Environmental Health & Engineering, Inc.

CHAIN OF CUSTODY FORM

1010268C

DATE: 10/12/10

FROM: Environmental Health and Engineering, Inc.
117 Fourth Avenue
Needham, MA 02494-2725

TO: Air Toxic

Please send invoices to ATTN: Accounts Payable
Please send reports to ATTN: Data Coordinator

In all correspondence regarding this matter, please refer to EH&E Project # 17314

The cost of this analysis will be covered by EH&E Purchase Order # 17314

For EH & E Data Coordinator - URGENT DATA ☐

	SAMPLE ID	SAMPLE TYPE	ANALYTICAL METHOD/NUMBER	OTHER:Time/Date/Vol.
33A	115487	Air	H2S Analysis	14 Days 18 Hours 30 minutes
34A	115488			
35A	115489			Ø
36A	115490			Ø
37A	115579			13 Days 18 Hours
38A	115580			
39A	115581			
40A	115582			
41A	115583			Ø
42A	115584			Ø
43A	115696			13 Days 16 Hours 30 minutes
44A	115697			
45A	115698			
46A	115699			
47A	115700			Ø
48A	115701			Ø

Special instructions:

☒ Standard turn around time ☐ Rush by ________ date/time ☐ Other ________

☐ Fax results 781-247-4305

☐ **RETURN SAMPLES** ☒ Electronic transfer - datacoordinator@eheinc.com

☒ Additional report recipient bbaker@eheinc.com; tminegishi@eheinc.com

Each signatory please return one copy of this form to the above address

Relinquished by: [signature] of Environmental Health & Engineering, Inc. Date: 10/12/10

Received by: [signature] of (company name) ATL Date: 10/13/10 09:00

Relinquished by: ________ of (company name) ________ Date: ________

Received by: ________ of (company name) ________ Date: ________

Relinquished by: ________ of (company name) ________ Date: ________

Received by: ________ of (company name) ________ Date: ________

Lab Data Received by: ________ of Environmental Health & Engineering, Inc. Date: ________

CUSTODY SEAL INTACT? Y N NONE TEMP 5.5°C

Fed Ex 8739 2461 6829 a10/13/10

Page 3 of 4

0018 of 0025

WHITE-EH&E FILE COPY YELLOW-LAB COPY PINK-PROJECT MANAGER COPY GOLD-DATA COORDINATOR COPY

Air Toxics LTD.
Laboratory Services Since 1989

SAMPLE RECEIPT SUMMARY

WORKORDER 1010269C

Client

Mr. Brian Baker
Environmental Health & Engineering, Inc.
117 Fourth Avenue
Needham, MA 02494

Phone

800-825-5343

Fax

781-247-4305

Sales Rep: TL

Date Promised: 10/26/10 11:59 pm
Date Completed: 10/26/10
Date Received: 10/13/10
PO#: 17314
Project#: 17314

Total $: $ 1,360.00
Logged By: AW

Fraction	Sample #	Analysis	Collected	Amount$
33A	115487	ATL Applications	NA	$80.00
34A	115488	ATL Applications	NA	$80.00
35A	115489	ATL Applications	NA	$80.00
36A	115490	ATL Applications	NA	$80.00
37A	115579	ATL Applications	NA	$80.00
38A	115580	ATL Applications	NA	$80.00
39A	115581	ATL Applications	NA	$80.00
40A	115582	ATL Applications	NA	$80.00
41A	115583	ATL Applications	NA	$80.00
42A	115584	ATL Applications	NA	$80.00
43A	115696	ATL Applications	NA	$80.00
44A	115697	ATL Applications	NA	$80.00
45A	115698	ATL Applications	NA	$80.00
46A	115699	ATL Applications	NA	$80.00
47A	115700	ATL Applications	NA	$80.00
48A	115701	ATL Applications	NA	$80.00
48AA	115701 Lab Duplicate	ATL Applications	NA	$0.00
49A	Lab Blank	ATL Applications	NA	$0.00
49B	Lab Blank	ATL Applications	NA	$0.00
50A	LCS	ATL Applications	NA	$0.00

Note: Samples received after 3 P.M. PST are considered to be received on the following work day.
Atlas Project Name/Profile#: CPSC/14482

BILL TO: Accounts Payable
Environmental Health & Engineering, Inc.
117 Fourth Avenue
Needham, MA 02494

Analysis Code: Other GC

TERMS:

Reporting Method: ATL Application #59 H2S-Radiello 170

Air Toxics LTD.
Laboratory Services Since 1989

SAMPLE RECEIPT SUMMARY Continued

Client

Phone

Fax

Date Promised:
Date Completed:
Date Received:
PO#:
Project#:

Sales Rep:

Total $: $ 1,360.00
Logged By: AW

Fraction	Sample #	Analysis	Collected	Amount$
Misc. Charges eCVP (16) @ $5.00 each.				$80.00

Note: Samples received after 3 P.M. PST are considered to be received on the following work day.
Atlas Project Name/Profile#: CPSC/14482

BILL TO: Accounts Payable
Environmental Health & Engineering, Inc.
117 Fourth Avenue
Needham, MA 02494

Analysis Code: Other GC

TERMS:

Reporting Method: ATL Application #59 H2S-Radiello 170

Sample Discrepancy Report

Identification

Initiated By: AW **Project ID:** 14482 **PM:** AS **Date:** 10/13/2010 **Discrepancy Type:** ☐ 1. ☒ 2. ☐ 3.

Workorder(s) affected: 1010269A/B/C/D **Sample(s) affected:** All

1. Sample Receipt Discrepancies

Narration Not Required:

1.1. ☐ Sample container (cartridge/tube/VOA vial) was received broken, however sample was intact.
1.2. ☐ No brass cap on canister.
1.3. ☐ Date of Collection noted on first sample, but no arrow down to indicate all samples.

Notify Lab for further determination:

1.4. ☐ Tedlar bag received with minimal volume.

Initials: _____ Date: _____

Narration Required in Lab Narrative and Sample Confirmation:

1.5. ☐ COC was not filled out in ink.
1.6. ☐ COC improperly relinquished / received.
1.7. ☐ Sample tags / can numbers do not match the COC.
1.8. ☐ Sample date ☐ error / ☐ missing on COC but noted on sample tag (check one).
1.9. ☐ Custody Seal on the outside of the container was ☐ broken / ☐ improperly placed (check one).
1.10. ☐ ID-none on the sample Tag/Blank
1.11. ☐ Other (describe below).

Describe the Discrepancy: _____

2. Sample Receipt/Screening Discrepancies requiring PM notification

Document on Cover Page of Sample Receipt Confirmation and in Receiving Notes of Lab Narrative

If Section II. is filled out PM must be notified within 24 hrs of initiation

2.1. ☐ COC was not received with samples.
2.2. ☐ Analysis method(s) is ☐ not specified / ☐ incorrectly specified (check one) on the COC.
2.3. ☐ Incorrect sampling media / container for analysis requested.
2.4. ☐ Number of samples on the COC does not match the number of samples that were received.
2.5. ☐ Samples were received expired.
2.6. ☒ Sampling date (time for sulfur) is not documented for ☐ *some* / ☒ *any* samples (check one).
2.7. ☐ Sample received with amount of H_2O in the Tedlar Bag.
2.8. ☐ Sample cannot be analyzed. Container was ☐ received broken / ☐ leaking / ☐ flat / ☐ defective.
2.9. ☐ Tedlar bag / canister received emitting a strong odor; Sample ☐ can / ☐ cannot (check one) be analyzed.
2.10. ☐ Tedlar Bag for Sulfur analysis has metal fitting.
2.11. ☐ Environmental Supply Company valves
2.12. ☐ Sorbent samples-sampling volume was not provided
2.13. ☐ Flow controller used – canister samples received at ambient or under pressure.
2.14. ☐ Canister was at ambient pressure at time of pressurization and (check all that apply):
- ☐ Canister failed leak check on two manifolds,
- ☐ Canister valve was open,
- ☐ Brass nut was loose/not present.
- ☐ Sample can be analyzed
- ☐ Cannot be analyzed

2.15. ☐ Canister sample received with a vacuum difference >5.0"Hg between the receipt vac. And the final vac. reported on the COC, indicating loss of vacuum.
2.16. ☐ Canister sample received at >15"Hg (*not* identified as a Trip/Field Blank).
2.17. ☐ Canister Trip Blank received at low vacuum (< 25"Hg).
2.18. ☐ Sorbent Sample received outside method required temperature of 2°C to 6°C; ☐ ice / ☐ blue ice (check one) was present. A temp. Blank ☐ was / ☐ was not present (check one).
2.19. ☐ Other (describe below)

Initials: _____ **Date:** _____ **Notify Receiving:** ☐ **Notify PM:** ☐

Describe the Discrepancy: _____

3. Lab Discrepancies requiring Team Leader/PM notification

Document in Analytical Notes of Lab Narrative

If Section III. is filled out PM must be notified within 24 hrs of initiation

3.1. ☐ Tedlar Bag found to be leaking at the time of analysis; sample ☐ can / ☐ cannot (check one) be analyzed.

3.2. ☐ Tedlar Bag found to be flat/low volume; sample cannot be analyzed.

3.3. ☐ Sulfur samples received with insufficient time to analyze prior to expiration.

3.4. ☐ Canister found to be leaking at the time of analysis.

3.5. ☐ VOST tube saturated; bag dilution necessary.

3.6. ☐ Sample loss due to instrument malfunction / broken glassware.

3.7. ☐ Low/high surrogate recoveries noted in QC/sample(s) for extractable samples.

3.8. ☐ Reporting Limit was raised.

3.9. ☐ Post weight > Pre weight in field/lab Blank for PM10/TSP samples.

3.10. ☐ Other (describe below).

Initials: _____ **Date:** _____ **Notify Receiving:** ☐ **Notify PM:** ☐ _____

Team Lead Initials: _____ **Date:** _____

Describe the Discrepancy: _____

_____

_____

How Does this Affect Client: _____

_____

_____

Project Manager Use Only

Project Manager Notification ☒ **Section 2 Complete** ☐ **Section 3 Complete**

Action:

☐ It is not necessary to notify the client. Narrate the discrepancy in Receiving Notes/Analytical Notes of Lab Narrative.

PM Initials:_____ Date: _____

☒ Client notification required. See attached client contact / email, or comments below:

Client Notification:

PM Initials:AS Person notified: BBaker Date: 10/13/2010

☐ Waiting for Client Reply

Comments: **Client emailed spreadsheet on 10/18**

_____

☐ Notify Lab Name: _____ Date: _____ **Notify Receiving:** ☐

☐ **Additional notifications attached.**

Additional Comments:

_____

Other Records

Air Toxics LTD.
Laboratory Services Since 1989

Method : ATL Application #59 H2S-Radiello 170

CAS Number	Compound	Rpt. Limit (ug)
7783-06-4	Hydrogen Sulfide	1.2

DATA REVIEW CHECKLIST

Work Order #: 1010269C

A_1	A_2	W	T	R	Q	
☑	☐	☑	☐	☐	☐	Analysis/Reporting vs. Project Profile/SOP requirements checked (i.e. 100% Dups, J-Flag to MDL, etc)
		☑	☐	☐	☐	The final report has the correct reporting list, special units, and header info.
N/A	☐	N/A				Non-Standard sublist printed/verified, LOQ and LOD verified
		☑	☐	☐	☐	Lab Narrative is correct (proper method & description/Receiving & Analytical notes correct)
		N/A	☐	☐	☐	Sample Discrepancy Report (SDR) is completed
N/A	☐	☐	☐	☐	☐	Corrective Action issued - #
☑	☐	☑	☐		☐	Unusual circumstances have been documented in the notes section below

LUMEN *validation report present and initialed* ***CIRCLE (YES / NO)***

☑	☐	☑	☐	☐	☐	Lab Blank, CCV, LCS and DUP met QC criteria
☑	☐	☑	☐	☐	☐	Hold time is met for all samples
		N/A	☐	☐	☐	Appropriate data qualifier flags are applied
		☐	☐	☐	☐	Manual integrations for samples and QC are properly documented
☑	☐	☑	☐		☐	Samples analyzed within the project or method specific clock
		N/A	☐			Retention times have been verified
☑	☐	☑	☐		☐	Appropriate ICAL(s) included, %RSD Recalculation
		☑	☐		☐	At least one result per sample is verified against the target quant sheets/raw data
☑	☐	☑	☐		☐	Dilution factor correctly calculated (sample load volume, syringe and bag dilutions, can pressurization(s))
☑	☐	☑	☐			Correct amount of sample analyzed (i.e. sample not over-diluted)
		N/A	☐			Spectra verified - documentation of spectral defense included (Section 5A of eCVP pkg)
		☐	☐			TICs resemble reference spectra
		☑	☐			TICs between duplicate samples are consistent
☑	☐	☑	☐	☐	☐	Checked samples for trends (i.e. Influent vs. Effluent, Field Dups, Field/Trip Blank, etc.)
☑	☐	☑	☐			Data for multiple analyses of sample(s) has been evaluated for comparability of results
		☑	☐			Special units for all samples in the final report are correctly calculated
		☑	☐			Manually entered results checked (i.e. TPH/NMOC)
☑	☐	☑				Chain of Custody verified for any special comments (i.e. different compounds/RLs, action levels)
		☑				Chain of Custody scanned correctly
					☐	Verify sample id's vs. chain of custody
☑	☐	☑				Date MDL(s) performed per instrument(s) 9/4/09
N/A	☐	N/A				Samples pressurized w/ appropriate gas (N_2 or He) ☐ Other (i.e. Tedlar bag, cartridge, sorbent)
☐	☐	☐				Final pressure consistent with canister size (6L vs. 1L)
☐	☐	☐				Verify receipt pressures
☑	☐	☐				Verify canister ID #'s
		☐	☐	☐		Final invoice amount correct (adjusted for TAT, Penalties, Re-issue Charges etc.)
		☐	☐	☐		Final PDF report reviewed for correctness

Notes: (to include: noting samples with QA/QC problems, Blanks with positive hits, narratives, etc.)

A/R: 21,270 minutes ~~dvc~~ RPTS 10/26/10 duration was used for all QC's and Trip Blanks.

T/Q:

A_1/A_2 (Analytical Review/Date)	W/T (Write-up/Tech Review/Date)	R* (Report Review/Date)	Q (QA Review/Date)
A_1: 10/22/10	W: 10/22/10	R:	
A_2:	T:		

Note (1): Please check all the appropriate boxes. Indicate "NA" for any statement that does not apply.
Note (2): Report reviewer and write-up reviewer must be separate individuals for DoD & Client Specific projects.
* Report Review is completed for DoD & Client Specific projects only.